



HQMC COOP Brief

25 July 2003



Mission

- Sustain HQMC legacy applications, data and enterprise services in the case of contingency scenarios as required.



Requirements

- Interim backup capability for critical network services
- Simultaneous Multi-site Synchronous Replication
- Immediately available
- Able to sustain 24/7 support of critical services until HQMC is reconstituted
- Minimize impact on Marine Corps operations at host site



Possible Solutions

- Direct Server-to-Server replication
 - **Bandwidth and processor intensive over WAN circuits.**
- Network Attached Storage
 - **NMCI**
 - **Negatively impacts current network architecture and load.**
- Storage Area Network
 - **Network within NMCI.**



HQMC COOP/DR

- **NMCI is coming . . . Soon???**
- **NMCI does not account for Legacy application and data COOP/DR**
- **NMCI will not manage USMC IT or Data at Target COOP sites**
- **If we had to COOP/DR today we would fail. . .**



The HQMC COOP/DR Plan

- **Defense COOP Integrated Network (DCIN) /HQMC COOP/DR**
 - OSD has established a robust network between the Pentagon Campus and Site-R that facilitates real-time synchronous replication of all critical operations and business continuity data.
 - OSD has funded \$5m EMC storage solution and Dell Servers for HQMC (Annex and Pentagon)
 - Congress has supplemented FY03 USMC Budget with \$6 million for extending HQMC COOP/DR
 - Funding will be used to add additional COOP/DR Sites and HQMC Organizations in the NCR and Mid-west



Why COOP to Quantico?

- **DCIN COOP capabilities at DCIN Target Site 1 only account for a small population of users that will need access to critical data in the event of a COOP scenario.**
- **Quantico must have the same capability.**
- **The extension of the DCIN capability to Quantico also enables the COOP'ing of M&RA and any other organization that supplies critical information to HQMC**

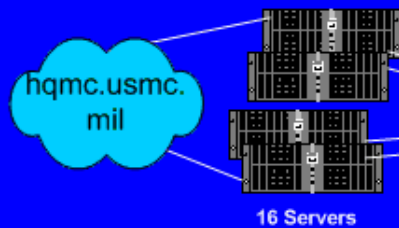


Why COOP to Mid-West?

- **Once all data is consolidated/COOP'ed in Quantico, the ability to replicate that data to a mid-west site creates the foundation for a Marine Corps Enterprise Data Center**
- **To exercise CMC's IT vision of one click access to integrated data stores and applications a Data Center is a must.**

HQMC COOP/DR Infrastructure - NIPRNET

Remote Site



EMC Connectrix
SAN Directors



Symmetrix
8830



HQMC
Failover

Symmetrix
8830



HQMC
Production

EMC Connectrix
ED-64M



HQMC Navy Annex



HQMC Production
Servers (16)



CNT USD

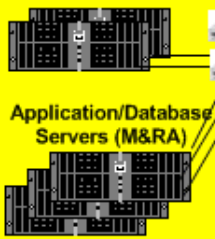
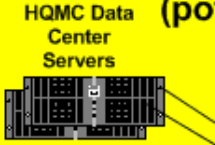


CNT USD



CNT Edge

1,000+ Mile Offsite (potential USMC Data Center)



DS-16B2



HQMC
Data
Center

Quantico
Failover/
Data Center

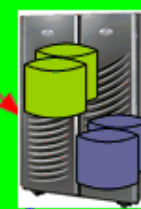


CNT Edge

CNT Edge



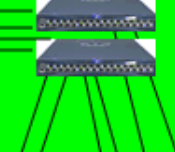
Symmetrix
DMX 2000



HQMC
Failover

M&RA
Local Data

EMC Connectrix
DS-32B2



HQMC Failover
Servers (16)

Legend

Synchronous Storage-
Based Mirroring

Asynchronous Storage-
Based Mirroring

Asynch Host-Based
Replication

Phase 1

Phase 3

Phase 2



CX400



CX400

Marsh Center



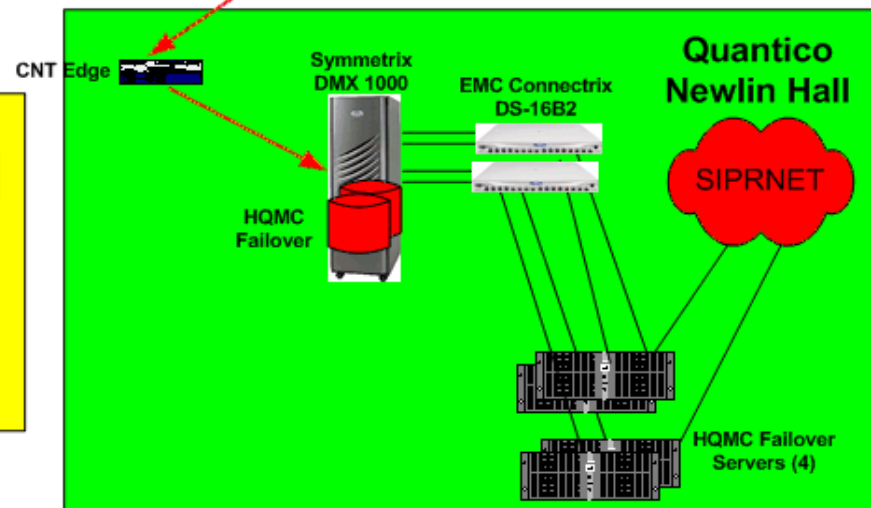
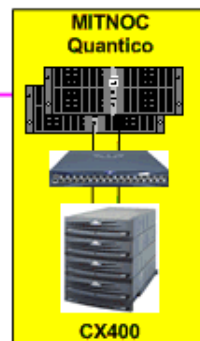
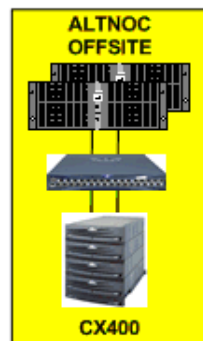
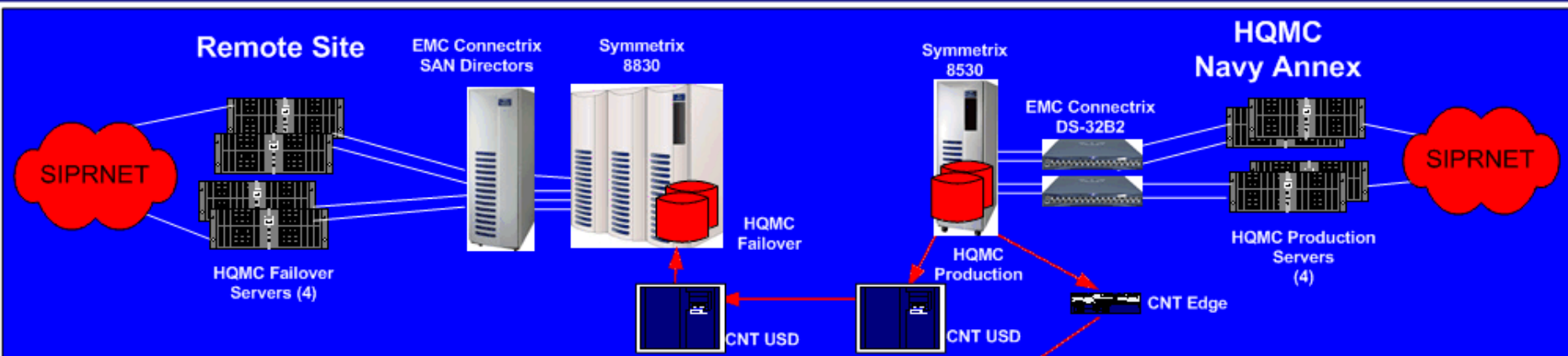
EMC Connectrix
DS-32B2



Application/Database
Servers (M&RA)



HQMC COOP/DR Infrastructure - SIPRNET



Legend

Phase 1

Phase 3

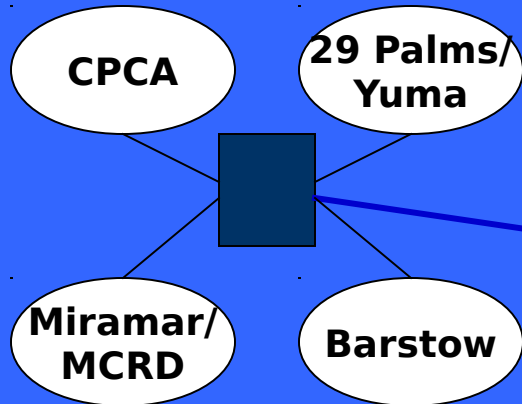
Phase 2

Synchronous Storage-Based Mirroring

Asynch Host-Based Replication

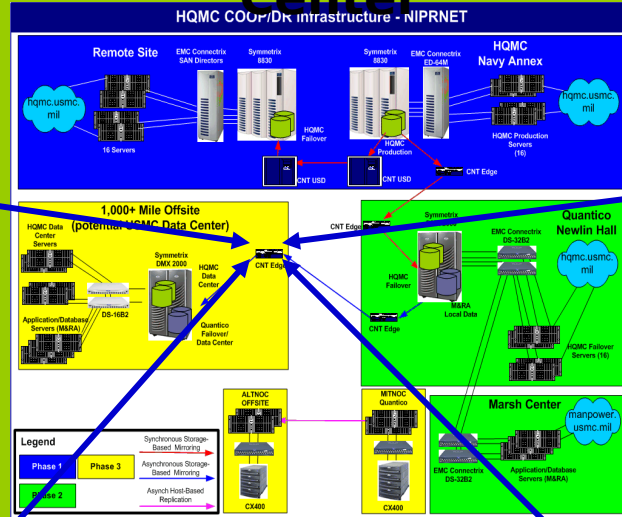
Phase 7

West Coast



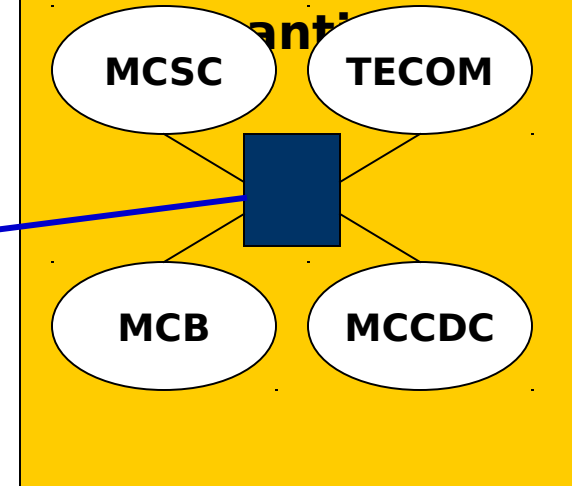
Phase 1 - 3

HQMC/MC Data Center



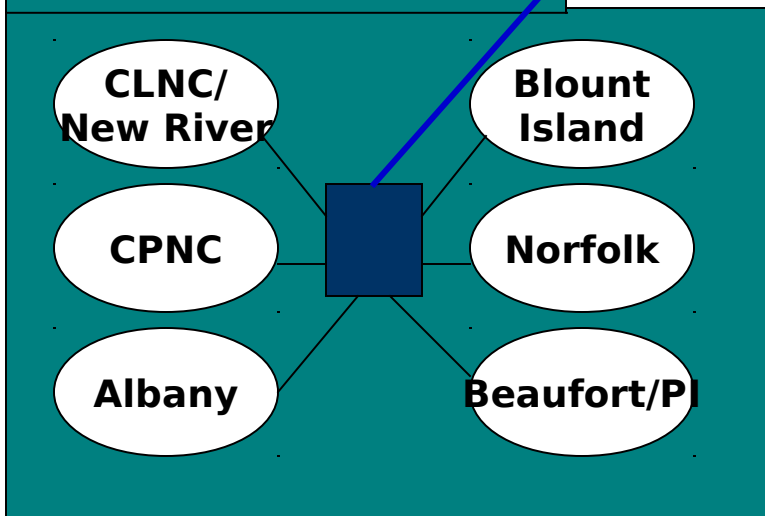
Phase 4

Remainder



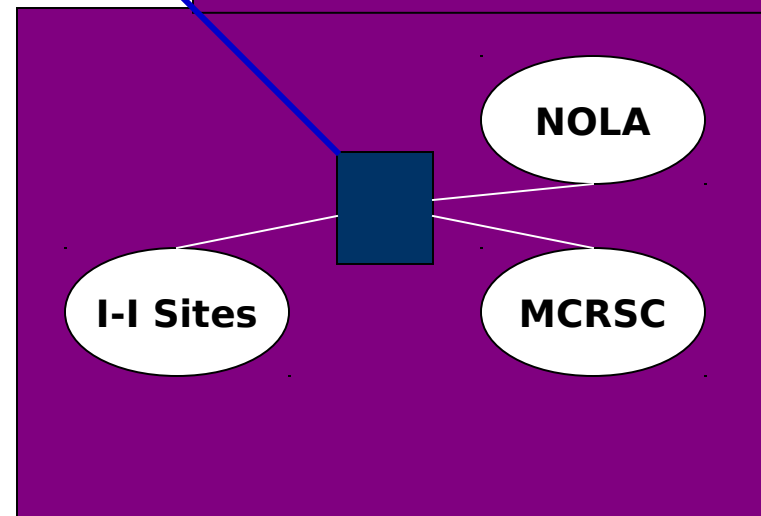
Phase 6

East Coast



Phase 5

MFR





COOP/Common IT

- **HQMC COOP is a service based on a standardized “Common IT infrastructure” that is compatible with DoD and extensible to the USMC enterprise**
- **Already integrated with the Defense COOP Integrated Network**

USMC Common IT Infrastructure

3 Independent Domains

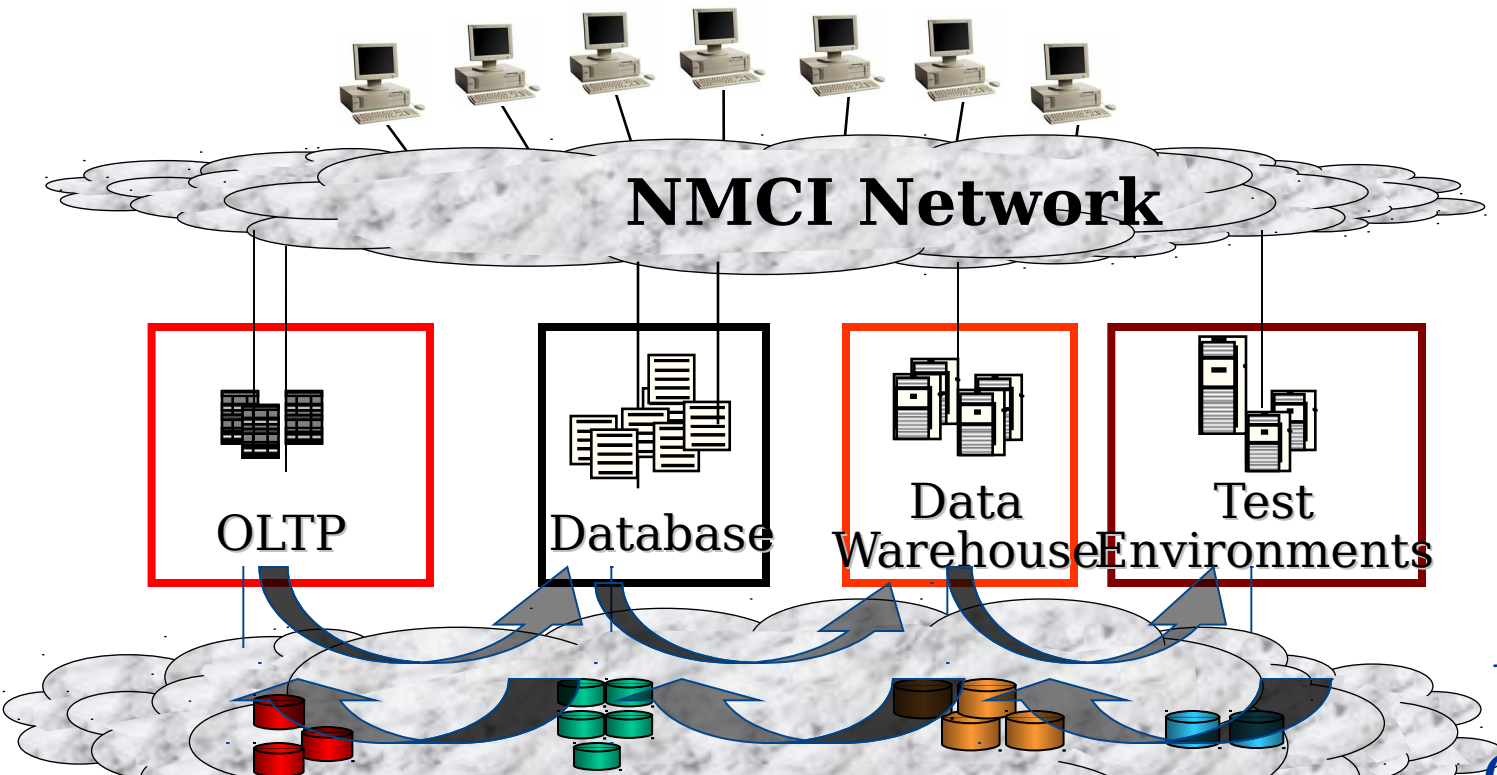
*Networking
Domain*

*Data
Presentation
and Processing
Domain*

*Data Logistics
Domain
(Data Mobility)*

**Common IT Infrastructure/Data
Center/COOP = USMC Networked
Storage**

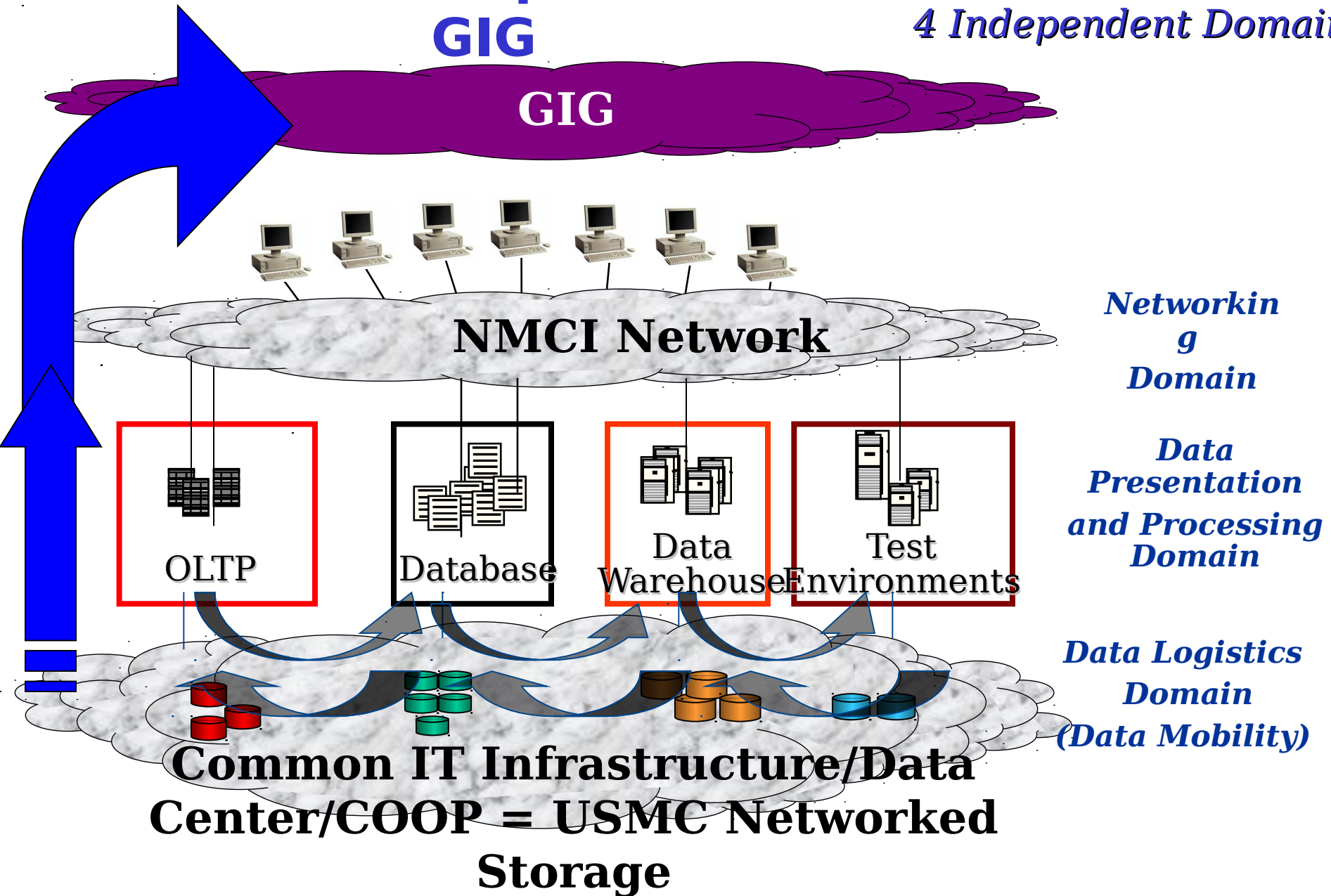
One set of skills, processes and procedures regardless of the server type or application



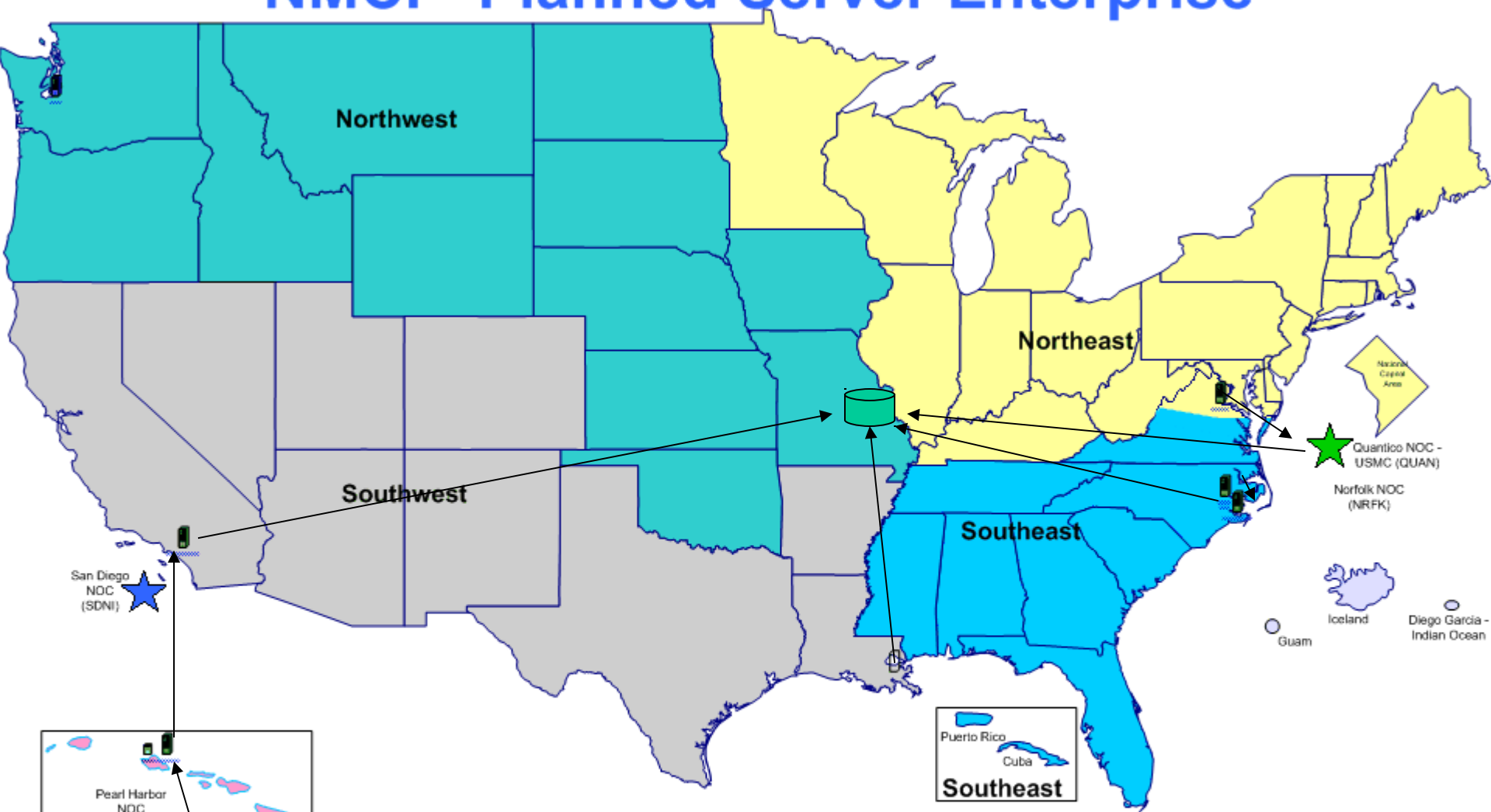
USMC Common IT

Infrastructure replicated to the
GIG

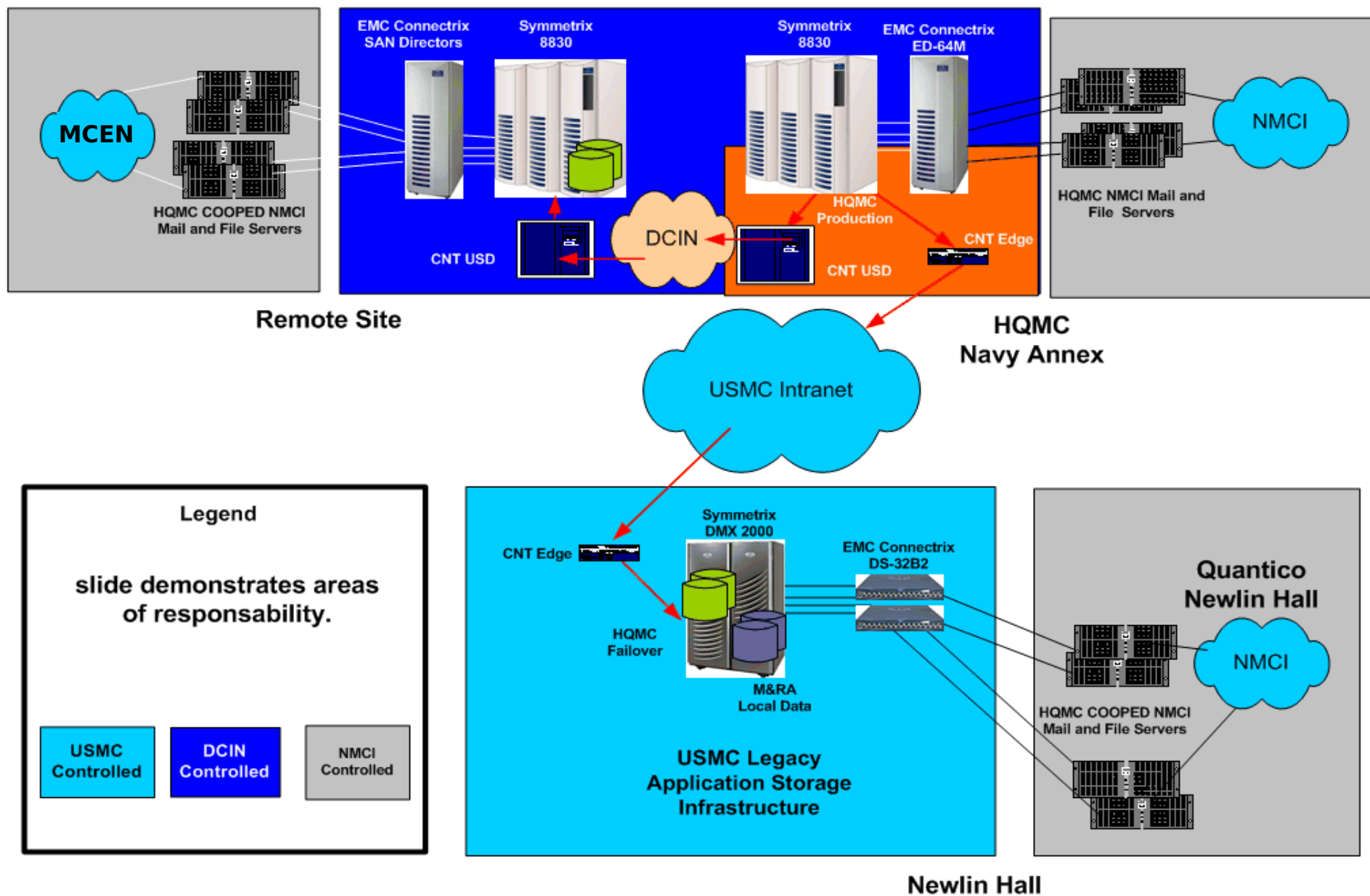
4 Independent Domain



NMCI - Planned Server Enterprise



HQMC NIPRNET COOP / DCIN / NMCI Integration





Why COOP the Enterprise?

- **Reduces overall Enterprise Server and storage costs**
- **Maximizes equipment**
- **Standardizes infrastructure**
- **Safeguards data and provides redundant access**
- **Enables SDE - ESDE - ePortals**

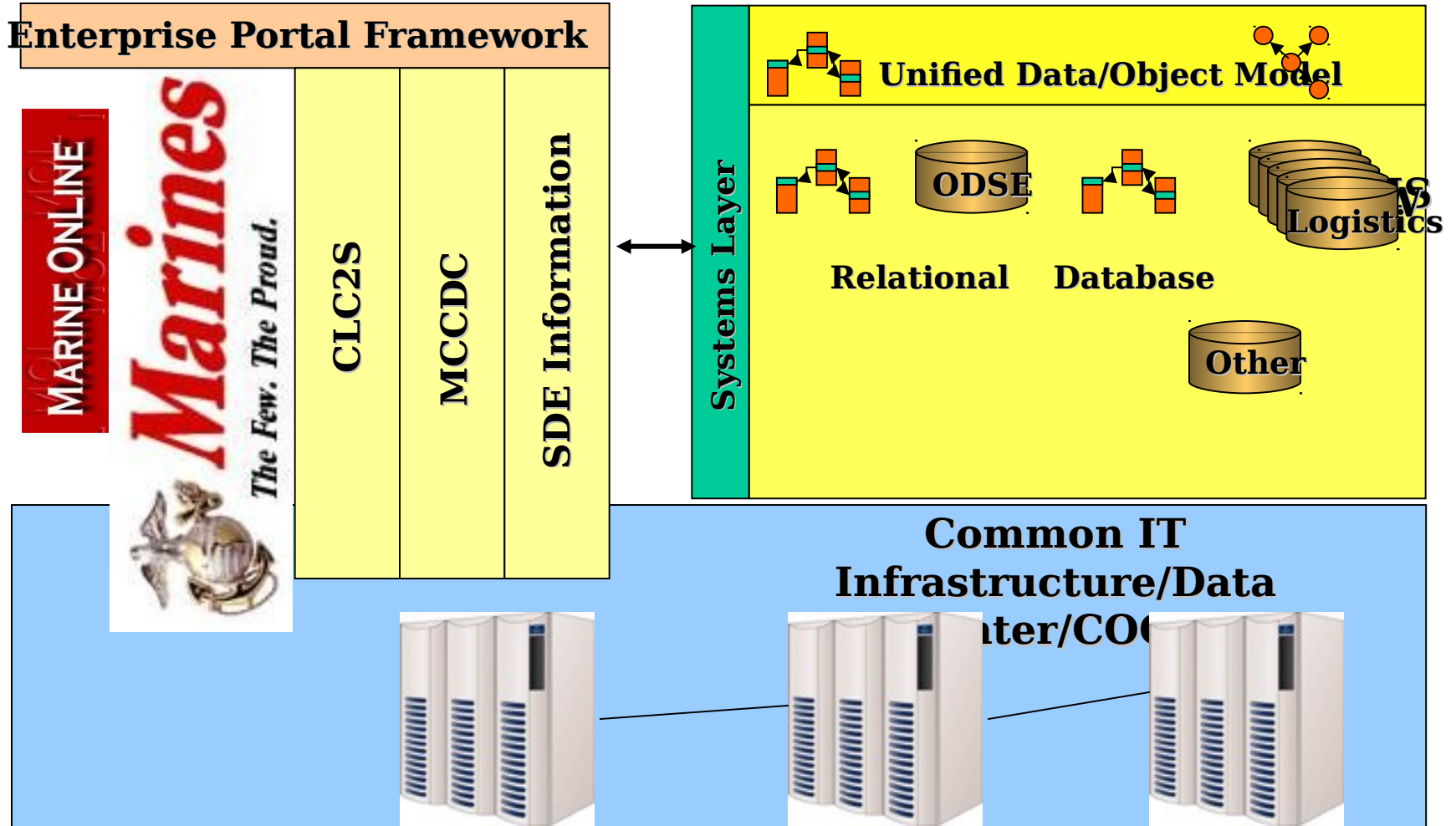


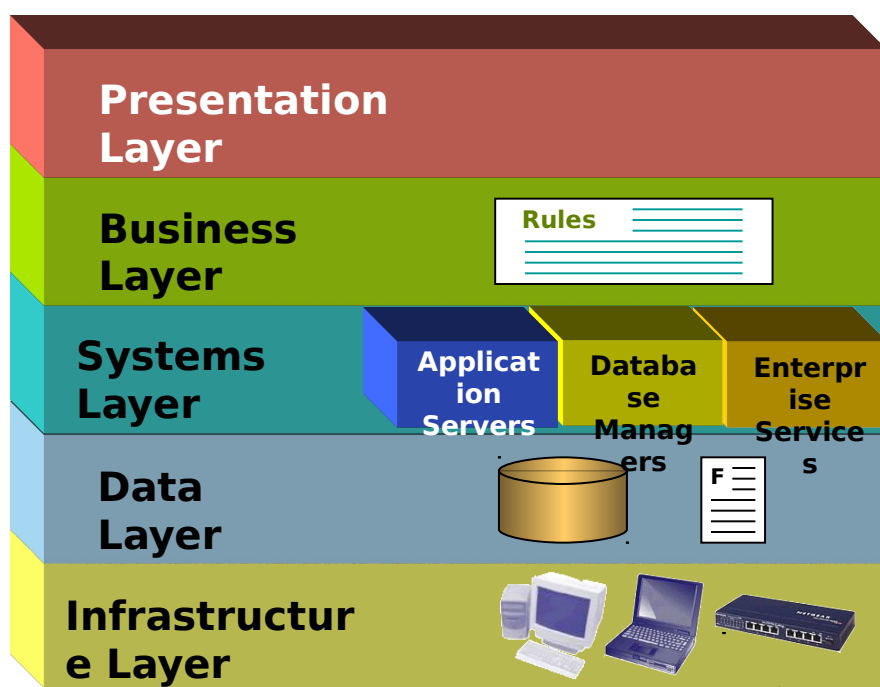
Why COOP the Enterprise?

- **What does Common IT Infrastructure provide?**
 - Production Services
 - COOP/DR
 - Application Development Environment
 - Test and Certification Environment
 - KISS-IT



Storage: Foundation for the Enterprise

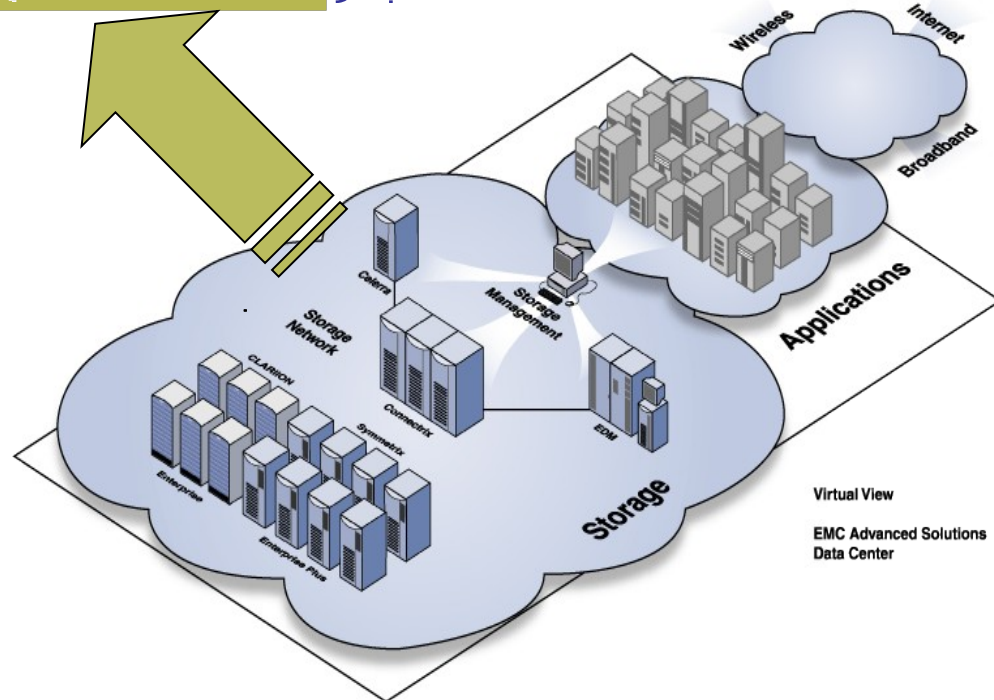




Enterprise Portal

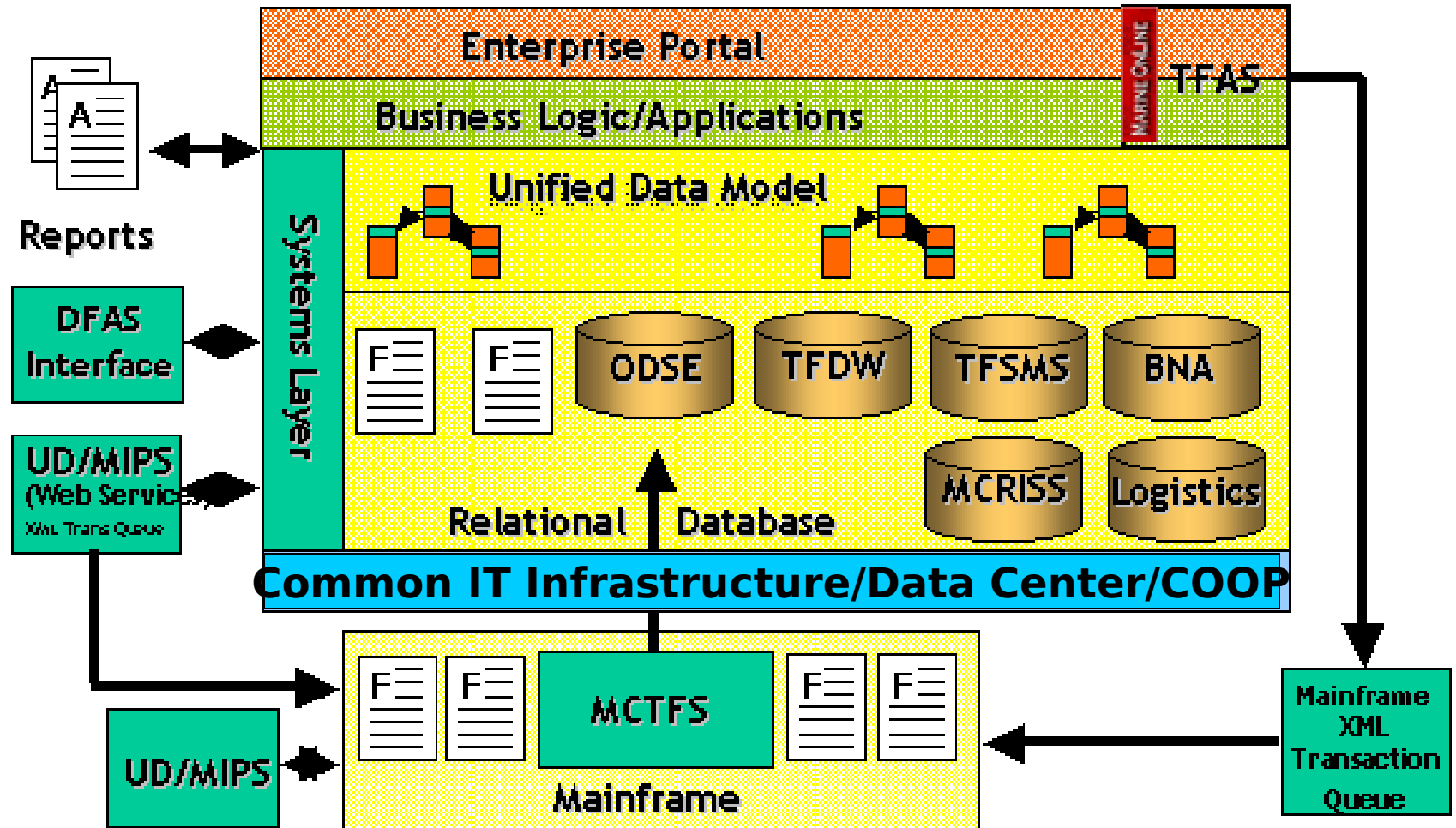
+

SDE





Data/Workflow Enabler





Why EMC/Dell?

- **Market leaders in their segments**
- **Unique ability to support and replace damaged equipment after the initial sale**
- **M16 A2 Theory**
- **STANDARDIZATION**
 - NMCI
 - DCIN
- **Reduce program variables**



Common IT Infrastructure

- **Objective**

- Common IT Infrastructure that is based on a USMC enterprise SAN with mirroring and replication to enable development, test, pilot, SDE, ePortals and COOP/DR

- **Execution**

- The SAN rides on NMCI but is a separate USMC controlled network that provides an enterprise class home for legacy apps, enterprise data and portals



Common IT Infrastructure

- **2 Parts - “Services” and “Infrastructure”**
 - Services = Data Center, Web Hosting, COOP/DR, SAN Mgmt, CMB . . .
 - Infrastructure = EMC Symmetrix storage with Dell Servers and Brocade fabric switches . . .



Standardization

- **A common IT infrastructure that is standardized enables the easy integration of new applications such as Aviation apps for new birds - the backend is no longer a variable - build to our spec's . . .**



Acquisition Strategy

- **Sole Source for HQMC COOP (\$7.6mil PMC)**
- **Single Contract, multi-vendor Hardware/Software solution**
 - Storage Hardware
 - Storage Mgmt and replication software
 - SAN Fabric switches
 - Servers
 - Hardware Installation